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HOW TO FIND  
Manufacturing Costs  
AND  
Selling Costs

BY

LESLIE UNCKLESS

COST ACCOUNTANT AND DEVISER  
OF OFFICE SYSTEMS



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FIRST EDITION

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# HOW TO FIND MANUFACTURING COSTS AND SELLING COSTS

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BY LESLIE UNCKLESS

COST-ACCOUNTANT AND DEVISER OF OFFICE  
AND FACTORY SYSTEMS

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## INTRODUCTION

The question of cost is a vital one to every manufacturer, and while it is true that most manufacturers realize this, there are many who have to learn the underlying principle, the basic law of cost, which is that Labor plus Material plus Expense equals cost.

In the earlier days cost accounting was not given the consideration it is now. It was not given the attention it deserved, but as competition grew keener it became necessary to know how much the manufacture of goods was costing and to know as soon as possible after the material was made, and in many cases to figure in advance the probable cost, which required making an estimate.

Now there are few manufacturers who do not figure out their costs, and while the information contained in this work is not to be considered final, it is the outcome of experience gained in the cost accounting departments of many different concerns.

The subject naturally divides itself into two parts, Manufacturing cost and Selling cost, the first having to do only with the manufacture of goods, the second with their sale.

Both consist largely of expense items, but in this

connection it is well to consider that expenses are necessary to the conduct of any business and should not be considered as unessential or as loss. In truth, all Labor and Material may be considered under the head of expense, yet, from the fact that they are more easily taken care of in other ways, they are not usually considered under the head of expense. Some labor and material can be charged direct to an article, which simplifies the work of the cost department, while some items which are required in the factory, and without which it could not exist, do not admit of such treatment. They must be placed in a general account and from that point be distributed, usually by percentages, according to a definite plan of apportionment which has been arranged.

The following chart shows the various divisions and subdivisions which, in total, form a manufacturing establishment. In the small plant the owner may be the whole executive force, but as his business grows he must delegate a portion of this work to others, and in the larger concerns the divisions shown are recognized and the relations they bear to each other are known and observed. In this chart we find that costs come under the head of accounting, which is but natural, and that it is connected to a certain extent with various other parts of the concern.

To this department primarily belongs the work of taking the data furnished by the timekeeping, accounting and stock departments, arranging and tabulating this information to show the net results. There is nothing creative or imaginative in the proposition as it is generally considered, yet it affords an unusual opportunity for the cost clerk who requires reasons for his acts and is not content to do a thing in a certain way merely because somebody "always did it that way." The enterprising man will weigh the acts of his predecessor and his own

as well, satisfy himself as to their soundness or lack of it, and if he finds that they are not based on correct reasoning, he will reject them and substitute a system which is correct. To be on the lookout for improved methods in cost accounting is to make of yourself a more valuable

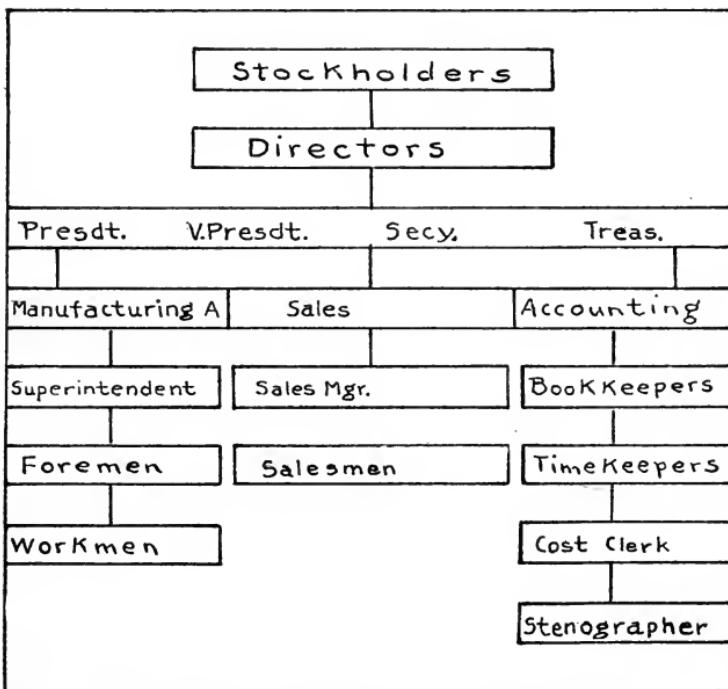


CHART OF DIVISIONS AND SUB-DIVISIONS.

employee, or in the case of an employer, to build for himself a bigger business. No system is so good that it cannot be improved, and suggestions to improve the methods of an institution are usually welcomed, even though they may not be adopted at once.

Perhaps this treatise on costs will contain nothing new to you, but the ideas will be expressed in a way which

should make them worthy of the study of anybody who is open to suggestion.

### HOW TO GET NEW IDEAS

The basic law of costs is—Material plus Labor plus Expense equals Cost, and the principles of cost accounting do not change. They are absolutely similar in every case, no matter what the product or how simple or complex its manufacture. The only difference then between the various cost systems offered must be in the application of the underlying principles of the science, or, in some cases, we might say the absence of application, since some men ignore them to a certain extent and always to the detriment of their business. Manipulation of accounts may stave off bankruptcy for a time, but results eventually in a pyrotechnic finish.

While on the subject of Organization it is well to consider not only the benefit of new ideas, but how to get them, as a business should be built from within. Periodical meetings of the executive force seem to be best in this respect, as thus there is given an opportunity for interchanging of ideas. A meeting of that kind should be a meeting where suggestion is the rule. A "knockfest" defeats the object for which the meeting was called. There isn't a man in an office who is so devoid of originality that he cannot make a good suggestion. Possibly some will be valueless, but to secure anything of value it is necessary to separate the good from the bad. As a further reason for the general meeting, men do not like to give ideas or suggestions in private to an individual, as the credit for them is generally not given to the originator. The open meeting on the contrary gives each

man an opportunity to get credit for his ideas, which is just what he wants and just what he should have.

YEARLY PERIODS	ARTICLE	UNIT									
		1900	1901	1902	1903	1904	1905	1906	1907	1908	1909
Jan.											
Feb.											
March											
April											
May											
June											
July											
Aug.											
Sept.											
Oct.											
Nov.											
Dec.											
Total											

COMPARATIVE REPORT OF SALES WHICH MAY BE ARRANGED TO SHOW QUANTITY  
VALUE OR BOTH.

To know at the end of the year what has been the profit or loss for the year is not enough. Monthly state-

## MANUFACTURING COSTS

ments should be required showing net profit or loss, and the manufacturer who has the matter of costs down to a certainty can know as often as that and at a small expense. If the article manufactured is, for instance, an automobile, it is not enough to know the total cost per

COST OF CASTING								
	190 TO 190	Pounds Produced	Cost per Pound	Total	Mfg. Expense	Direct Labor	Total	Total Cost
					%	Amount		Per lb.
								For Month
JAN								
FEB.								
MARCH								
APRIL								
MAY								
JUNE								
JULY								
AUG								
SEPT								
OCT.								
NOV.								
DEC								
TOTAL								

COMPARATIVE REPORT ON COST OF CASTINGS.

machine. The cost of different groups such as frame, engine, body, etc., must be known as well, and back of that must be available the cost of separate parts of each group if the cost system is to be a success. It is not meant by this that a cost must be figured on each part in every case, although that may be done, but if it is at any time necessary or desirable to know that cost, the system

should admit of its being shown without the necessity of making an exhaustive research.

Cost keeping can be carried to extremes as well as anything else, and it is quite as important to steer clear of red tape as it is to have a cost system at all. The following formula explains how the cost of an automobile might be shown:

Cost of parts of a group = cost of group.

Cost of groups + assembling = cost of machine.

In other words, the part costs something, the sum of the parts equals the cost of the group, and the cost of the different groups plus the assembling equals the cost of the machine.

Suppose, for example, we are figuring the cost of engines for an automobile and find that they cost \$150.00 each while the estimate is \$100.00 each, an increase of 50% and of course very unsatisfactory. The question, "where is the increase?" naturally arises and it becomes necessary to analyze this particular cost, which may be gone about in the following way:

A list of the parts constituting the engine is made out and the estimated cost looked up. Considering first the cylinder, we will suppose that the cost is made up as follows:

	COST	ESTIMATE
Material .....	\$4.00	\$3.50
Labor .....	7.00	7.00
Expense .....	7.25	7.00
Total .....	<hr/> \$18.25	<hr/> \$17.50

Though the estimate is \$17.50, there is an increase of 75 cents on each engine and so on throughout the whole list of parts. The difference will be shown on each, and at the end, if the calculations have been correct, we find that the net amount of increase is \$50.00.

Now, having found where the increase is, the next

question is, "why the increase?," which will have to be explained by the foreman having the work in charge, provided any increase in cost of labor is found. If changes in expense or material are discovered, the estimate should be revised to conform to the correct figures. If the work is all done "piece work," no increase should be found except as may occur by reason of defective parts on which some labor has been done, for the timekeeping department will pay only for the number of good pieces delivered and the inspection department will keep the timekeeper posted in that respect.

Where part of the work is done "day work," however, it is very likely that increases will occur and to the foreman in charge belongs to a great extent the work of keeping up the production per employe which will keep down the cost. The forms and systems described throughout this work will, if followed, make possible comparisons of cost with estimate of previous costs, and these are of course of great value.

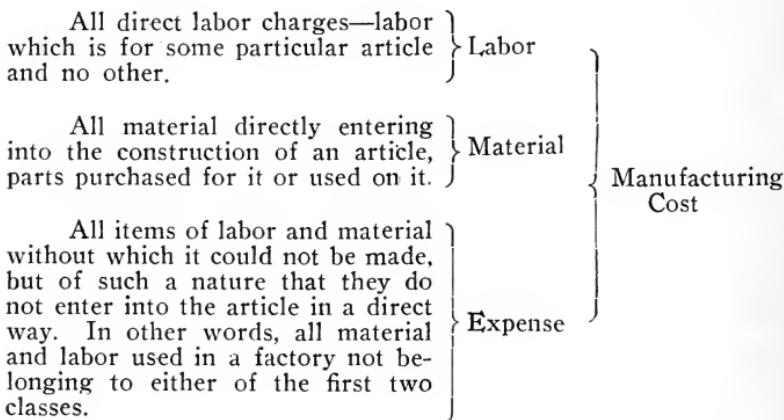


CHART SHOWING THE THREE GENERAL CLASSES INTO WHICH EVERYTHING ENTERING INTO A COST MAY BE DIVIDED.

## GETTING ALL THE INFORMATION

In figuring the cost of castings, for instance, it is not enough to know that there were a certain number of pounds produced and that the total charges equaled a certain amount.

This may do in some instances, it may be the only information required, but in most foundries there is the inventory to be considered and the line of investigation in figuring a cost would be about as follows:

Are there any cores for this job in stock which will be used later?

At the close of the month were there any molds in the foundry not poured, on which the labor charges went in with the month's production, etc.?

The cost clerk in any establishment should not only use the information given him, but should have the requisite knowledge of the business to enable him to know when he has received all the information necessary.

When all the data required has been furnished, he will be able to figure a correct cost and not until that time.

It makes no difference what the product, the loose ends must be gathered up. The printed forms used in the cost department may sometimes be printed so that any omissions will be noticed and where possible this should be done, so that there will be no excuse for anything to be overlooked. To fix the importance of these facts in your mind, the following formula is given:

Total charges less value of inventory = cost.

Less inventory—here is where the trouble often is. The total charges are easy to get, but the inventory is

often overlooked, or if taken, is sometimes not figured properly.

The correct amount of an inventory is not always what the parts represented have cost, but rather it is what they should have cost and nothing should be inventoried at a higher figure than a duplicate lot could be produced for.

### AVERAGE COST

Average cost of output or production is sometimes a good thing to know, but is rarely an accurate way to figure costs.

A foundry might wish to know the average cost per pound of each month's production, yet to figure that each pound of castings produced has cost just this average amount would be to make a great mistake. Some castings will cost three cents per pound at the shipping room scales, others may cost fifteen cents per pound, and the separate cost of each kind is necessary.

As a rule, the heavier the casting the lower the cost per pound, but these matters should be taken up when the estimate is made. Another thing to be considered in the foundry business is that small pieces require more melted iron to produce a ton of castings than do large pieces, for a larger part goes back to be remelted and this is an item worth looking into.

If a contract is made to furnish a customer with whatever castings he requires, the cost may be considered in one lot, that is, charge the job with everything used on it. It must be remembered, however, that unless the castings are ordered in the same proportion, they are figured in the estimate, that is, for the same number of pieces of each kind the cost is apt to be unsatisfactory.

and this naturally leads to the subdivision of a job, the grouping of certain pieces and figuring costs on them together.

### FOLLOW-UP

To keep an account showing the location of all parts in process from the time they are started until assembled requires extra labor, but the results will in many instances warrant that being done. In a bicycle factory, which will serve as an illustration as well as anything else, the number of parts is so large that a system is required to keep them moving through the factory and the following plan was used:

The order department issued shop orders for the different parts required and in the superintendent's office a book was kept, one page of which was used for each part ordered and the pages were large enough to take care of a season's orders in most cases. The number of columns in a page provided one for each operation of the part and the names of the operations were written in the proper columns when the order was placed.

Take as an illustration a rear sprocket of which say 1000 7-tooth  $3/16$ " were ordered. On arrival of the Shop Order in the superintendent's office auxiliary orders would be made out, one for each foreman having any work to do on the lot and one of these would be sent to the punch room to start work on the job, the original being kept in the superintendent's office to be filed after entering it in the stock book. Each foreman then knows how much work he has in view, although some time will elapse between the receipt of the order and the receipt of the partly finished material. If the order is marked "Rush," part of the sprockets may be taken from the press and hurried through the other operations, but in

every case deliveries from one department to another must be signed for. A ticket similar to the accompanying form is made out in triplicate and the department receiving them is required to sign for them.

Once a day these tickets are written up. That is, they

No. _____	DATE _____
DELIVERED TO	DEPT.
THE FOLLOWING	
DEPT.	FOREMAN
RECEIVED BY	
TIME	

FORM FOR TICKET FOR DELIVERIES FROM ONE DEPARTMENT TO ANOTHER.

are entered on the proper auxiliary order by the department delivering them and are also placed in the "received" column of the order in the department receiving them. One copy of the receipt is left in the box of parts and the stub is retained in the foreman's book. Two of these books are provided for each department and one is in use

there while the other is in the office being written up, that is, while the entries are being made on the stock book to keep this record up to date. This plan keeps an accurate record of each part being made and gives the location of these parts at all times. If 7.T 3/16 sprockets are required, the superintendent can, by looking at the stock book, see at a glance the number coming through, when the order was placed and the present location of the parts.

Thus there is no evading the main issue by a foreman. If he states that the goods have left his department, he must prove his statement by his receipts. A "chaser" could be used to good advantage in this system and it would be his duty to go through the factory daily and hurry along the parts most needed. The tickets in the boxes will show him when material was delivered and how long it has lain in a department without being worked on. It is not necessary to deliver all the auxiliary orders as soon as they are made out in the superintendent's office. On the contrary, it will be a good plan to hold them in some cases and let the parts go as far as necessary and then put them in the stock room. This eases up on some departments which can run during the dull months of the year on material which it is not necessary to finish until later. Some trouble may be experienced in starting a system of this kind in a factory where foremen have been allowed to do pretty much as they liked, but once it is understood that the new plan has come to stay, there will be but few who will not get in line. There is no good reason why it cannot be made to work in any kind of business. Foremen will be more alert if they know that an absolute check is kept on their departments.

### LABOR

Since labor is one of the most important parts of cost, it requires a great deal of care on the part of the

manufacturer to record it properly. A record should be kept of every employe and the accompanying form shows in substance the information usually required on records of this kind. The employe should sign this record, so that if necessary to identify his signature at any time the

RECORD OF EMPLOYEES		
No.	NAME	
ADDRESS		
AGE	MARRIED OR SINGLE	
PREVIOUSLY EMPLOYED WITH		
DATE EMPLOYED		DISCHARGED
		QUIT
REMARKS		
SIGNATURE _____		

card may be referred to. Any information peculiar to the requirements of a business may be incorporated in these records as desired. The employe's value is determined to a great extent by the amount of supervision he requires. There are some men who, when a job has been given them, take entire care of the matter from that time on, getting the work out in the proper way and at the proper time. These men, on account of requiring little

supervision, are more valuable than men who have to be constantly watched and directed as each new step with the work is taken. They receive more pay because they are worth more.

### METHODS FOR PAYMENT

The various methods used in paying employes are considered under the following heads:

1. Day work.
2. Piece work.
3. Premium plan.
4. Contract.
5. Profit sharing.

A great many of the manufacturing establishments of the present time are using the day work plan. This is simply paying the employe a certain amount for a specified number of hours spent in the factory, with no stipulations as to just how much work is to be done during that time. Of course, if a man shirks to any great extent and is discovered, he loses his job. Wages are fixed according to the class of work done and in the different classes according to the value of the man. The amount of work he turns out determines what pay he shall receive, as it is only fair to give the alert and thorough workmen more than the slow one.

This plan requires a large amount of help to supervise and direct the workmen and much of this time is taken up in seeing that each employe is kept busy. If a day worker runs out of work, the temptation to stand around until he is given something else to do is sometimes too strong to be resisted.

### PIECE WORK

The piece work plan places a price on each operation or piece manufactured and the employe is paid according

to the number of pieces he turns in. In some cases he is charged for the pieces he spoils. The temptation to slight the work is so great that a rigid inspection system must be installed where this plan is used, in order to see that the count is correct and that the work is properly done. This plan should result in more money for the workman since there is an incentive for him to speed up, and it also benefits the employer by increasing the production without adding to the manufacturing expense, thus decreasing cost and increasing profit. The employer who sees his workmen making more than their day work rate is sometimes tempted to cut prices and the employe puts on more steam and will make possibly as much as before, which results in another cut. When the price gets so low that in spite of his extra exertion the workman can make but little if any more than regular pay while on day work, he naturally gets discouraged and quits and the next man on the job may have to be given day work in order to get the work done at all.

Cutting piece prices spoils all the good there is in this system, for if the workman thinks that to turn in a big day's work is to invite a cut in prices, he will naturally stay on the safe side and do only enough to avoid a cut. In establishing piece work prices it is advisable to run through a lot of "day work" and from the results of this determine on a price for the operations, and once such a price is established, do not change it. Of course, this cannot be done in every instance, but the man who, by reason of his ability, is able to earn more than another, is worth it and the firm employing him can well afford to pay it.

#### PREMIUM PLAN

The premium plan is that arrangement whereby an employe receives, in addition to the wages paid him, an extra amount for doing more than what has been named

as a day's work, or for completing a task in less than the specified time. The proportion of factories using this plan is not large, yet it possesses some very attractive features.

### CONTRACT WORK

It is doubtful if contract work in factories is ever of much benefit to the manufacturer. To be sure, it releases him to a certain extent from supervising the work, but he more than pays for this item in the contract price, as the contractor is rarely satisfied unless he is making more than a foreman.

To maintain that the contract system is of advantage to the manufacturer is to admit that the contractor has better executive ability and can manage men to better advantage than the regular foreman or superintendent can, an admission which few proprietors would care to make. The most noticeable disadvantage in this system is, that it prohibits a knowledge of the cost of different operations being known. A certain price is paid for doing a number of different things and to figure out just what is paid for each is practically impossible, and without an absolute knowledge of the cost of each operation no concern is getting value received from its cost department.

### TIME

One of the best Time systems for taking care of the time of employes in the factory is to have a timekeeper in each department, whose duty it is to furnish a man with a ticket each time a job is started, which shows the name or number of the job, the time commenced and when the ticket is turned in the time completed is noted thereon. These tickets may be assorted daily as to job numbers and after the cost of the jobs is figured they may be rearranged by the timekeeping department and entered

on the time book. Machines may be purchased to do much of the detail work in time keeping and cost accounting, and where the size of the plant or the volume of work turned out makes it possible to use them, they are very economical besides being absolutely accurate.

WORKMAN'S NO.	NAME			
JOB NO.	NAME			
OPERATION				
TIME STARTED		NO. PIECES		
TIME FINISHED		PRICE PER PIECE		
TIME WORKED		TOTAL		
DATE	OK			

FOR INDIVIDUAL JOB RECORD

### CLASSIFICATION OF MATERIAL

Material for an article should only be drawn from the stock room on a requisition properly signed by the foreman, which gives the required information regarding the transaction. These tickets should be taken to the office daily and entered in the stock book, form 7. The tickets may then be assorted according to the job num-

bers or articles to be charged, so that if it is necessary to know the charges against a job the tickets may be found all together. The stock book is merely a perpetual inventory and once a month it is figured up and the

STOCKROOM TICKET					
DATE.....					
DELIVER TO BEARER THE FOLLOWING MATERIAL					
CHARGE TO					
_____ FOREMAN					
RECEIVED BY _____					

FORM 6, FOR STOCK ROOM REQUISITION.

balance brought down, although balances may be brought down more often if desired.

The clerk keeping this book should be required to hand in monthly a classification of charges which shows the various accounts to be charged for material drawn and the amount of such charges. Form 8. A classification of the time is made monthly by the timekeeper on the same form and these forms may be placed in binders

## MANUFACTURING COSTS

FORM 7, FOR STOCK BOOK.

30

## CLASSIFICATION

CLASSIFICATION

FORM 8, FOR MONTHLY CLASSIFICATION OF TIME.

and used as journals, which makes it unnecessary to copy them into the regular journal.

ESTIMATE & COST SHEET				UNIT	—
ARTICLE				DATE	
<b>TOTALS</b>					

### ESTIMATES

In order to know positively whether or not a cost on an article is as low as it should be, it is necessary to refer to the estimated cost sheet. Each cost figured might be lower than any of the preceding costs and still be too high. Some goods afford a larger profit than others, but this is no reason why the cost should not be accurately known.

Guesswork has no place in the figuring of costs and the estimate should never be used as a substitute for them. It is auxiliary to the cost and while not of equal

importance perhaps, it yet serves as a check on costs which are too high. In making up an estimate a blank form should be used which has four or five columns. These may be headed Material, Labor, Expense and Total and if the item of expense needs to be considered in classes, extra columns may be provided for that purpose.

As the first column is for material, the footing of this column represents the cost of the material in the article and the footings of the other columns show in turn just how much labor, manufacturing expense, etc., should go into the cost.

To illustrate, take a low pressure cast iron boiler that is used for heating houses. The steam dome, we will say, weighs 300 pounds which, at a cost of one cent per pound, gives three dollars (\$3.00) to place in the first column. This piece requires a certain number of chaplets, a certain amount of core sand and core oil or compound. The value of all these is entered under material. Possibly this is all the material in this piece, so that the total shows what should be figured for material.

Some founders charge the cost of core sand to Foundry Manufacturing expense, rather than try to figure the amount used on each casting or job, but to do this is to charge indirectly a portion of the expense to castings that require no cores which, of course, gives misleading and inaccurate costs, too high on some castings, too low on others, although the average cost may be the same. The labor of making the cores and the cost of molding can be estimated and placed in the labor column and a certain percentage of the labor cost or of the labor plus material is computed and placed in the expense column, while the total of the three columns for the dome is placed in the fourth column under the head of Total.

This plan is followed on each part of the heater and the total cost of each part gives a basis to figure what

repairs shall be sold for, and an estimate figured in this way permits a thorough analysis of the cost to be made, should it be necessary. The average weight of a section may be found easily, but it is better to know what the weight should be than to know only what it is. By computing the cubic contents of a casting and adding a percentage for strain, an approximate weight may be found. Some molders will make castings year after year from a set of patterns and there will be little loss and only a slight variation in weight. Put another man on the job and the loss may be greater and the castings much heavier, as he is not as good a workman and finds it easier to file the core than to set his chaplets or arbor correctly. It is not considered good practice to figure that castings ought to weigh a certain amount and then use these figures. Weights are better than estimates and then call the matter to the attention of somebody responsible if the castings are running heavy.

The cost clerk in making up an estimate should get his labor costs from the foreman or superintendent, since they are best fitted to furnish information of that kind. There is often a similarity of operation which must be considered to arrive at reasonable estimates and it is of course up to the factory to keep its part of the cost within the estimate. There may be instances where this cannot be done, but if it is given proper attention there is little chance for error. The subject of estimates is considered by some to be a superfluous operation, a waste of time, giving results misleading and inaccurate. I hold that on the contrary the estimate as outlined herein is only exceeded in usefulness by the cost itself and that it is a check on the cost which can be secured in no other way.

## TIME CARDS

The time card form is commonly used in taking up the time of employees. One is taken from a supply by

**FORM FOR TIME CARD.**

each man on going to his work in the morning and is turned in by him at night filled out.

This permits the employe to keep his own time, which is not a good plan, for the reason that he is apt to get careless and inaccurate and again the time spent by him in making out the cards could be spent to better advantage if some other plan for taking a record of the time were in use.

FORM FOR TIME BOOK

FORM FOR FOUNDRY TIME BOOK.

This is an excellent plan when it can be used, but in the factory having a large number of accounts on the general ledger, the book would have to be so large that its other good points would be defeated by its clumsiness. It is not a difficult job to classify a month's time in the average factory if it is gone about in the right way. In truth, it is often a saving of time to handle the time by means of separate books for timekeeping and pay roll, instead of attempting to use a combined book for the two, which necessarily wastes a great deal of paper and usually much time.

### COST OF MATERIAL

The cost of material for an article is the value of whatever stock it takes to build it less the value of the waste or left-over pieces, providing this material has a value.

The lumber used in a table might cost \$3.00, but owing to the peculiar shape of some of its parts there might be left-over pieces which would be worth twenty-five cents in the manufacture of other articles. The cost of the lumber for that table is then \$2.75 and it should be figured at this rate so long as the scrap pieces represent a value of twenty-five cents. In the manufacture of other things it will sometimes be found that there is nothing left over which can be used, but these cases are unusual and the wise manufacturer will see that this question is given proper attention by the cost department.

Expense	Office	Cost department, purchasing department, and whatever other labor and material is required in the office chargeable to manufacturing.
	Factory or Manufacturing	This expense may be considered under the heads of the various departments, an account being kept for each as Wood Shop expense, Foundry expense, and this is borne by the production of the department in which it is incurred and not necessarily by every article made.
	General	Items of expense such as rent, heat, light, depreciation, taxes, etc., a part of which is to be apportioned to every article manufactured.

CHART SHOWING THE DIVISIONS WHICH MAY BE MADE OF EXPENSE INCIDENT TO THE MANUFACTURING OF AN ARTICLE. SELLING EXPENSE IS NOT CONSIDERED, AS IT IS AN EXPENSE TAKEN CARE OF SEPARATELY.

### CLASSIFICATION OF OFFICE EXPENSE

The various expenses are chargeable with the cost of operating the office.

Some clerks work on manufacturing work entirely. Others are taking care of the sales and some devote a

portion of their time to each of these departments in turn. The classification of office expense then should provide for both of these and as many other accounts as are thus affected.

The manufacturing cost should be kept in one account and the selling expense distributed over the goods sold and shipped and at inventory time the selling expense on goods sold but not shipped, may properly be considered an asset, as is also unexpired insurance and other matters of that class.

Manufacturing expense may be termed the expenses incident to the manufacture of goods and selling expense, the expense incident to their sale. Up to the time goods reach the shipping room they are subject to various manufacturing expenses, but after this time the selling expense is usually considered, although there is a difference of opinion as to where one ends and the other begins. Goods in the shipping room are subject to expense, but their value is not increased by them. Rent, insurance and other things are an expense which must be taken care of, but should not be added to the cost of the goods.

## SYSTEM

"System is order" and whatever forms or methods are used to maintain this condition may be rightfully called systematic and whatever tends to confusion, inaccuracy or incompleteness is not deserving of the name System.

The institution having the most elaborate records is not necessarily the most systematic. Real System aids in the transaction of business. It is not a hindrance as many so-called systems are. Many houses are keeping two sets of records where one could be made to do the work more satisfactorily by a rearrangement of the forms.

A cost system should have just as few different forms

as will properly handle the matters under consideration and the cost system should work in with the books of the concern. In truth they should be merely auxiliary books, which give in detail the information found in totals in the ledger. Considered in another way, a cost sheet is merely a transcript from the various books used in the accounting department of a business.

### COST BY LOTS

In this method of figuring costs a cost is figured on the completeness of each lot which comes through the factory. A certain quantity is ordered from the factory and the material necessary to make it is drawn from the stock room.

When the order has all been run through there will usually be a few parts on hand which cannot be assembled, owing to shortage of other pieces caused by breakage, etc. An inventory of these is taken and when the cost is figured their value is deducted from the total charges shown by the ledger. The balance is the net cost and having this it is easy to find the amount made. The stock book furnishes that information and the cost per unit is easily found.

By lettering the lots Lot A, Lot B, etc., it is possible to start the second lot before the first is finished and still keep the costs separate and if the work is kept moving through the factory in the proper way there will be no boxes, barrels or shop cars full of partly finished material side tracked and possibly overlooked when an inventory is taken.

The storeroom is the proper place to keep material which is not being worked on and the fact that a quantity of parts is on the shop floor should be evidence that a shop order for the article of which it is a part has been issued and that *it should be kept moving*. Men and

machines must be kept busy and parts kept in motion if the result is to be something worth while in the way of profit. The statement often made that "No system is so good that it cannot be improved," is very true and though the cost keeping is done by the cost clerk, he usually has very little to say about it, his work being to take the information given him and from it to figure out the costs. The cost clerk can make suggestions, however, if he finds that things are not going as they should and may co-operate with the executive force to the advantage of the latter, if he is properly encouraged.

The various departments must work in harmony to secure the best results. There are but few problems which cannot be solved, few difficulties which cannot be overcome by an organization working in the proper spirit. No friction should be permitted between departments. There may be friendly rivalry, but friction produces wear and means loss.

	Shipping	{ Labor Cartage. Packing material, other than standard packages.
	Sales Manager, Assistants and Salesmen and their expenses.	
	Advertising.	
Selling Expense		Part of Administration expense in some cases.
	Commissions.	
	Part of Postage account.	
	Part of Stationery account.	
	Mileage books.	

CHART SHOWING SOME OF THE ITEMS WHICH MAKE UP  
SELLING EXPENSE. THE TOTAL OF THIS EXPENSE  
ACCOUNT IS TO BE CHARGED PERIODICALLY TO SALES  
ACCOUNT.

ROUTE FOR THIS WEEK	
COMMENCING MONDAY	-----
MONDAY	CARE -----
TUESDAY	----- " -----
WEDNESDAY	----- " -----
THURSDAY	----- " -----
FRIDAY	----- " -----
SATURDAY	----- " -----
SUNDAY	----- " -----
LEAVE ONE OF THESE EVERY SATURDAY	

FORM FOR SALESMEN TO MAIL WEEKLY TO SALES  
DEPARTMENT.

Chart showing some of the items which make up selling expenses. The total of this expense account is to be charged periodically to sales account.

### SOME ITEMS OF INDIRECT LABOR EXPENSE

Expenses incident to the receipt and distribution of material should be charged to the material delivered to the factory on requisitions. A common way is to apportion this expense over the material delivered, by adding a certain percentage to the cost of the material to take care of this expense.

**WATCHMAN.**—This item of expense is properly chargeable to general expense or that expense of which each article made takes its proper share.

**SPECIAL POLICE.**—The superintendent, engineer, firemen, oilers, electrician, gate tenders and timekeepers as well as many others all come under this head. The rule is that whatever item of labor or material which enters indirectly into an article or which benefits the whole plant, is to be charged to an account usually called

General Expense and from there distributed to the various departments and Stock in Process account.

A foreman's time is a charge only against the work done in his department. It is not a general expense. If each department has a sweeper his time should be charged the same as that of the foreman and all the indirect labor and material used in a department increases the cost of the articles produced in that department and in no other. General Expense then is an expense which must be borne by each part of the plant in proportion to the benefits received, the space occupied or on some other basis of distribution, while Machine Shop expense goes no further than the machine shop.

#### Pattern, Tool, Machine or Repair Order.

Order No. 0 6997

Repair  
 Replacement

**IMPORTANT.**

All labor and material used on this order must be charged to the ORDER NUMBER.

All labor and material must be itemized on the back of this order, and must agree with items charged to this number on time books, stock reports, and invoices.

Return this order to the superintendent when the work is completed.

Charge everything to the order number, not to the name of the job.

Foreman..... 190

Make .....

Charge..... Countersigned by..... Authorized by..... Issued by.....

Supt.

Order Completed.....

Foreman.....

190

Correct.....

Supt.

#### EXPERIMENTAL WORK, DESIGNING, ETC.

The charges for experimental work in a factory are not always easy to apportion correctly. In some cases it is all loss and in others something is added to the assets. Because the designing department is located in the pat-

### **Report of Labor and Material Used on this Order.**

SHOWING BACK OF FORM 15.

tern room is no reason why the pattern room should have the expense of its maintenance.

It is a good plan to issue special orders for that work and when it is completed charge the amount it has cost to the accounts that should stand the expense. If a special jig is designed for a machine of which thousands are to be made, the disposition of the charge will be entirely different from when the tool is required only on a special order. A manufacturer must get the cost of special tools, drafting, designing, etc., out of the goods made on the first order or he will NEVER get it. If this work is required for articles regularly made, the handling is entirely different.

Some manufacturers charge the cost of this work to the Stock in Process account of the article it is for and when it shows up in the cost, make allowance for it; that is, figure what the cost would be without it.

### PATTERNS

As a rule patterns are assets and should be treated as such. Thus, the patterns required for an article to be manufactured would be charged to the pattern account of that article.

The charges are thus where they will not confuse anybody in figuring costs and confusion might easily happen if the patterns were carried in the Manufacturing or Stock in Process account of the article. Repairs or replacements are proper charges to expense accounts and these repairs or replacements should, as a rule, maintain the actual or insurable value, so that little or no depreciation will have to be charged off from the pattern accounts. In case a pattern becomes out of date and is no longer to be used, it should be charged off the books, as it has ceased to be an asset. If the manufacture of an article should be discontinued, there would be no further use for the tools,

patterns, etc., and either all or part of their value should be charged off, the amount depending in every case on the circumstances surrounding each transaction. If the article is never to be made again and it is not desired or is not possible to sell the patterns, they should be "scrapped" and whatever they are worth as old material is all the

value they represent and the balance should be charged off. There is nothing made by declaring dividends on material of this kind, which is really what it amounts to, if the proper disposition is not made. There will, of course, be some patterns which cannot be treated in the way mentioned. For instance, a pattern of a jig is made for some special work, which will never be needed again.'

In such case the whole cost should be charged to the job.

In bidding on work which requires special tools or patterns, their cost must be included in the price quoted, either as a separate charge or included in the lump sum price or price per unit. It makes little difference how it is done, so long as it IS done. In making patterns the expense or burden is not so great as in many other parts of the factory, and this should be taken into consideration when making up the basis of apportionment. The pattern expense rarely includes any item of material, since practically every nail and screw can be charged directly to the job on which it is used and not as expense to be apportioned over the entire product of the room. It is, therefore, advisable to have an account for pattern room expense, which will of course be charged with its proper share of Heat, Power, etc., but which will not have to bear any of the material expense of other departments. The head pattern maker, except in larger shops, can divide his time among the different jobs better, as a rule, than the cost keeper can, by charging it all to expense and afterwards distributing it over the various orders. This must be determined by each manufacturer for himself, as no absolute rule can be made.

#### NAME OF ACCOUNT

*Debit*

*Credit*

#### STORES ACCOUNT

Debit for all material received which is to enter into manufactured stock later.

Credit for value of whatever drawn from stock room at cost plus expense of handling.

#### LABOR

Charge for all wages paid to employees.

Credit as charged to the different expense and stock in process accounts.

## MERCHANDISE

Charge for total amount delivered to stock room at estimated cost price. For cost of returned goods.	Credit for sales at estimated cost price.
---	---

## SALES

Charge for merchandise sold at cost prices. For selling expenses For credits.	Credit amount of sales as shown by sales journal.
---	---

## STOCK IN PROCESS ACCOUNTS

Charge for material from stock room, labor from labor account and expense from each of the various expense accounts.	Credit value of goods made and delivered to stock room at estimated cost prices.
--	--

## EXPENSE ACCOUNTS

Charge for labor and material constituting expenses.	Credit as apportioned to stock in process accounts or otherwise disposed of.
--	--

The accompanying diagram shows how one factory handles the various accounts relating to its costs.

The balance of stores account shows the value of all stock remaining in the stock room. This information is given in detail on the stock book (Form 7). As merchandise is charged and credited at cost prices, the balance of this account shows the value of merchandise on hand and the detailed information is given on the stock book. Sales account is handled in a way which permits the balance to be considered as the net profits

## MANUFACTURING COSTS

FORM 17.

insofar as they can be shown without consulting the expense and profit and loss accounts. The balance on any stock in process account is assumed to be equaled by the value of the material coming through the factory until an inventory is taken at the close of a lot and the small difference then found is placed in adjustment account.

Of course, the expense accounts are many for this particular factory and all are closed monthly and charged to the various stock in process accounts and to whatever other accounts are affected. It is not necessary to do this in every factory, as a cost can be figured by taking the material and labor charges and adding the proper expense, but as a rule a monthly distribution of expense to the various accounts is more desirable, although requiring more work. The form (18) shown herewith illustrates how the net profit or loss of a branch house may be determined monthly and has to do with selling expense, only the material being billed to the branch at certain prices which, although not representing actual costs to the home office, represent the amount the branch is supposed to pay for them.

Manufacturing cost as a rule goes no further than the shipping room. Whatever expense is incurred in marketing an article must be added to the manufacturing cost as a selling expense, in effect at least.

If a concern has a representative who handles their material in a certain section of the country, it is evident that a large part of the selling expense is eliminated from this transaction, and they can generally make a much lower price to their representative than to a customer called on by their own salesmen and at no sacrifice of profits. Where a salesman sells on commission there is

## Approximate Balance Sheet Report.

no guess work as to his selling expense. It is a known quantity. True, where a salesman is working on a salary basis there is no guesswork about it, but nevertheless it is a variable quantity. It may therefore be considered good business practice to tabulate the results and show

NAME OF SALESMAN					
MONTH	NET SALES	PROFITS	EXPENSES	COST OF SELLING	
				THIS YEAR	LAST YEAR
JANUARY					
FEBRUARY					
MARCH					
APRIL					
MAY					
JUNE					
JULY					
AUGUST					
SEPT.					
OCT.					
NOV.					
DEC.					
TOTAL AND AVERAGE					
LAST YEAR					

FORM FOR SALESMAN'S REPORT.

just what salesmen are profitable and what are not. This will result in very interesting statistics, resulting usually in showing that it is not the cheap man who is getting the best results. The amount of money spent by a salesman is not the only thing to be considered. Take his net sales for a given period and find out what his selling expense is in percentage. This is the important

SALESMAN'S WEEKLY EXPENSE REPORT								
NAME	WEEK ENDING							
	S	M	T	W	T	F	S	E
HOTEL AT								
R.R FARE OR MILEAGE								
EXCESS BAGGAGE								
STREET CAR FARE								
ENTERTAINMENT								
POSTAGE & TELEGRAMS								
TOTALS								
REMARKS								

FORM FOR SALESMAN'S WEEKLY EXPENSE REPORT.

thing to consider, although where available the net profits may be considered as well.

	1906	1907	1908	1909	1910	1911
February						
March						
April						
May						
June						
July						
August						
September						
October						
November						
December						
January						

FORM TO SHOW AMOUNT OF NET SALES TO A CUSTOMER BY MONTHS AND YEARS.

### SALESMEN'S ACCOUNTS

In the majority of cases it is a good plan to open a ledger account with each salesman, charging him with the amount advanced him for expenses and crediting him for his expenditures as they are O. K.'d by the sales department. Form 20 is a suggestion for an expense report which gives in detail the required information, a common form which may be changed as required, in fact some houses only require a report of this kind monthly.

It is a common practice to advance a salesman a certain amount when he starts on his first trip, the amount being determined of course by the circumstances in the case, and as soon as an expense report is received and checked up the amount of it is sent to him. It is quite essential that these reports be sent in promptly at the close of the month, for they are chargeable to selling expense and without them it is of course impossible to arrive at the exact cost of selling for a month.

### SHOP ORDERS

No lot of goods should be started in the factory until the proper production order has been issued, and this applies to special work tools and jigs as well. Emergency work is an exception to this rule, but such cases are not of frequent occurrence, and Form 22 gives the information usually required on it. The superintendent may issue auxiliary orders to the foremen or may simply tell them what to do. The size of the business determines that, and the foremen in turn pass the instruction along to the workmen. On completion the orders are returned to the

ORDER NO. _____	
DATE	190
SUPT.	
MAKE	_____
REMARKS	
DELIVER TO _____	
CHARGE TIME AND MATERIAL TO _____	
DATE STARTED _____ DATE FINISHED _____	
RETURNED TO OFFICE _____	
SUPT. _____	
ORIGINAL	

superintendent, who O. K.'s them and sends them to the main office.

If the order is for a pattern, new tool or for repairs, it may be given on the special order blank shown by Figures 14 and 15, but the principle is the same. On all orders for stock to be manufactured, a report should be made daily of all finished material sent to the store room and this information is noted daily on the shop orders in the superintendent's office. This report may be on a properly prepared sheet which can be sent to the office to be copied into the stock book daily, and where this is done it is essential that the person receiving the goods sign the report, showing that the material has been delivered.

**FORM 23.**

It is a good plan to use tickets similar to Form 23, printed in triplicate and require one of these to be sent with each lot of finished goods sent to the store room. One is retained by the person making the delivery and

one goes to the office. Of course the order department should be the source of all orders, and another fact equally important is, that no order should be started in the factory until all the material is on hand or in sight for it. Having to set up machines the second or third time to finish a lot of parts naturally increases the cost.

## INDEXING ORDERS

For indexing orders a book called the Order Register is used. The accompanying form gives the information

**FORM 24.**

usually found on this book, and for convenience in looking up an order number these books may be printed with fifty lines on a page, one for each order, and may be numbered by the printer. Two pages will then bear the same number at the top and each two pages be numbered from one to one hundred inclusive.

To look up an order, say number 4012, open the book

to page 40 and number 12 will be the order required. In other words, the page number is the first part of the number and the numbering in the lines completes it. This book is supplemented in many houses by an order index; either cards or a book may be used for the purpose, in which a certain space is allotted for each customer and all the order numbers for him entered in this space. This facilitates looking up an order if the number is not known, as all the numbers allotted to a customer are in the proper place and may be readily found.

### STOCK ROOM

Theoretically, at least, all material should be charged to the stock room on arrival and from this point be distributed on requisition as required. Everything in the stock room is an asset, and when an article is charged out it merely passes into another account, where it may still be an asset or an expense.

Those items which are charged to expense accounts, such as cotton waste, etc., should be drawn in limited quantities for two reasons. In order that one month's production shall stand only its proper share of expense as, if a large amount of waste is drawn for use in the machine shop its cost is charged to the production of the machine shop for the month in which it is drawn, although possibly a good share of it might be used in subsequent months. Where the supplies of this nature are drawn in limited quantities, the workmen will be more careful than if they are allowed to help themselves at will from a full bin. Material purchased for office use should be treated in the same way. A dozen boxes of carbon paper may be purchased which will last perhaps several months, and it is,

of course, irregular to make any one month stand the whole expense. It makes little difference what the articles are, until used they are assets and should be considered as such.

Sometimes a separate stock room is used for office supplies and it is not suggested that in all cases an order be given every time a pen or pencil is required. The point is to charge up in any month only what is used in that month and this applies particularly to that class of material entering into the expense accounts. It is often advisable to purchase in excess of immediate requirements. This plan has advantages, such as lower prices, fewer invoices to credit, etc., and if the proper disposition of the article is made on receipt, one month's selling or manufacturing expense will not be inflated to the gain of the succeeding months.

SALES REPORT		PREVIOUSLY REPORTED	'907		'908	
DATE	TODAY					
TOTAL						
NO ORDERS RECEIVED						
NO ORDERS SHIPPED						

FORM 25.

## REPORTS

There are some reports of so confidential or private a nature that it is advisable to keep them from all except

the one who makes them out and the manager. Where printed forms are used for this purpose anybody who sees them can absorb all the information they contain, and to avoid this the following plan was devised. (See Form 25.)

The record cards secured were merely the ruled stock cards, and on one of these was written a key as

DAILY CASH REPORT		7/07
BALANCE	6125	00
RECEIPTS	481	20
TOTAL	6606	20
DISBURSEMENTS	334	00
BALANCE	6272	20
ACCOUNTING		
CASH IN BANK		6000 00
CASH ON HAND BILLS		200 00
" " " GOLD		0 00
" " " SILVER		72 70
		6272 20
BANK DEP. TODAY		
BILLS REC. ..		
BILLS PAY "		

FORM FOR DAILY CASH REPORT.

shown on the top card. The spaces for the date and amounts were cut away as shown, and when it was necessary to write up one of these reports, this key was placed

over one of the blank cards and the proper figures entered. After the key is removed the figures are absolutely mean-

**FORM FOR RETURNED GOODS.**

ingless to anyone who does not possess a key. These records may be used for sales reports, cash reports, etc., and will be found satisfactory.

## RETURNED GOODS, DEFECTIVE AND OTHERWISE

When goods are sold the quantity is noted on the stock book, perpetual inventory or whatever you choose to call it and is deducted from the balance on hand. It therefore follows that where goods are returned which are to be placed in stock again, the amount received must be added to the balance on hand.

Since the credits to the stock in process accounts are made from these sheets, it will be necessary to handle the recording of returned goods in a way to avoid confusion. Returned goods must not be credited again to the stock in process account of the article, yet they must be considered as being in stock. The proper entries for matters of this kind are:

Chg.	Mdse	Cost value of goods
"	Sales Acct.	Difference between cost and amount credited.

Credit      Customer      Amount allowed  
and make the entries on the stock book in red ink. This will indicate that the figures represent returned goods, and when figuring the production at the end of the month the necessary deduction may be made in order to find the quantity actually manufactured.

If the goods returned are defective, a somewhat different handling of the matter is required. Merchandise cannot be charged since the goods do not go back into stock, and sales account should not be charged with any more than the profit originally figured on the transaction. If there is any salvage the stock in process account of the article should be charged with the parts saved at cost prices and the balance goes into profit and loss account, although it may be advisable in some cases to open a

special account for matters of this kind, which will enable the management to know just how much of this business is occurring.

Suppose a cast iron radiator is returned to the manufacturer. He finds on examining it that all the sections are broken. His entries would be

<i>Debit.</i>	<i>Credit.</i>
Iron Account.	For value of old metal as scrap.
Sales Account.	Customer for amount allowed. For profit figured on transaction.
Profit and Loss or Special Account.	For balance.

Instances have come under my observation of foundries charging returned castings to sales account and then wondering at the close of the year why iron account showed a credit and why sales account showed much less profit than it should show. Matters of defects may be traced back to the workmen in many instances, yet having done this it is seldom that he can be made to pay for the damage or any part of it. If the transportation company is at fault, a claim may be entered and when paid should be credited to the profit and loss account if this account was charged when the goods were received.

To keep the records of a manufacturing concern correctly requires in addition to a technical knowledge the faculty of reasoning, yet there will probably always be a class who will persist in doing a thing in a certain way because it has always been done that way by somebody else, and these same men resent suggestions as to improved methods because they are afraid that the person offering them has his eyes on their job. When making suggestions to a department head or manager it is always a good plan to make them in writing. Then if he is busy at the time he receives them, the matter can be laid aside

until he has the time to give it the consideration it deserves.

## PERPETUAL INVENTORY

One of the best things in an office system is the perpetual inventory. The accompanying form gives the essential information required in a record of this kind,

although the form may be changed or combined with other records as in the stock book, Form 17, from which stock manufactured and sold may be determined.

Whether the records are to be on cards or loose leaf books must be decided by each man for himself, but

about the value of the record there can be no question. These forms may be used for manufactured stock on hand and for material in the stock room, although they are not confined exclusively to these two lines.

### CHANGING OF PRICES

Changes in prices, which are by no means infrequent, require that this subject be given attention by every manufacturer. For much of the material purchased it is possible to make contracts for the season's requirements. This method merely names the figure which has to be paid for that article during the life of the agreement.

No matter what is to be paid for material, estimates for future work should always be based on the market price at the time the estimate is made. When figuring on a job a manufacturer might find that by reason of his foresight in contracting for material he could safely figure below the market price, yet it would not be policy to do this without an absolute knowledge of the facts, from which he could determine what part of the saving he could afford to give the customer. Some bidders might not have protected themselves against a raise in prices and of course they are at a disadvantage. In matters of that kind a good plan would be to consider all the facts bearing on the subject and quote according to the peculiar circumstances of each transaction.

A manufacturer may find that he has in stock certain articles on which the market is lower than when they were purchased, and as soon as a fact of this kind is brought to light, the difference should be charged off. This difference is a loss and if it is charged immediately to the Profit and Loss account it is disposed of for all time, but if not, it will result in increased costs on every article using it. The ultimate result is the same in dollars and cents, and in some factories it might not be advisable to

follow this plan except on occasional articles, yet at the time of taking inventory nothing should be valued higher than the prevailing market prices.

Dividends declared on fictitious values have to come out sometime and somewhere, and besides this the modern business man wants to get right down to bed rock and wants to know where he stands.

### CONTINUOUS PROCESS FACTORIES

There is one class of factories, "Continuous Process Factories," on which it is comparatively easy to figure costs. In a factory making paper, for instance, the expense is easily apportioned over the product and the expenses are as easily determined.

As a rule these factories or mills do not have the multiplicity of expense accounts which a hardware factory requires, neither do they have to purchase such a variety of stock or material, and these two factors are instrumental in enabling their proprietors to arrive at correct costs without an elaborate system or great expense. The factory making but one article in one size has a much simpler proposition than one making hundreds of articles. In the first case, all the expense is borne by one article, but as soon as another article is added a subdivision of expense becomes necessary and it is here that the subject of costs requires the most attention.

### RECEIVING DEPARTMENT

The receiving department of a business is usually in charge of the shipping department, which turns the material over to the stock room, or it may be in charge of the stock room direct. In either case a record of material received must be kept, which will show all the necessary information, and the usual practice seems to be

to enter the material received in a receiving book and from that book check the invoices.

In a moderately large factory this takes a great deal of time. There is a great number of articles coming in

RECEIVING RECORD				
	DATE			
	NAME _____			
	WILL SHIP US BY _____			
	THE FOLLOWING ARTICLES			
	RECEIVED	R.R.	PRO. NO.	CHGS.
	CAR NO.	PLACED	STARTED	FINISHED
	COUNTED OR WEIGHED BY	CHECKED BY	INVOICE SENT TO OFFICE	

daily and the following plan will do away with nearly all of the copying and will, as a consequence, cut down the expense of operating this department.

The receiving record (Form 29) is made when the order is placed. In fact, it is made out with the order and is simply a third copy of it, the first being the order which goes to the concern from which the material is

purchased, the second being the record kept in the office and the third constituting the receiving record which goes to the receiving department. It is necessary to have these records of uniform size and to have the arrangement such that will insure the information being copied in the correct spaces, and in addition the serial number will be similar on all three sheets. A binder should be provided in which these sheets may be placed where the material is received and the arrangement, whether by order number or by date received, may be determined by the user. Up to the time the material is received these sheets may be kept in a file arranged alphabetically.

The advantages of this system are so evident that an extended discussion is not necessary, and although it may not be possible to adopt it in its entirety, it is possible to so arrange the form that they may be used in any business. Of course, where a shipment is not made complete at one time, a record of what is not shipped will have to be made, but the instances where this is necessary will be rare if judgment is used in issuing the orders. The car record book (Form 30) is quite necessary where the receipts in this way are large, as it enables the shipping clerk or receiving clerk to keep after the cartmen and not allow demurrage to accumulate unnecessarily and in addition furnishes a complete record of all cars received, date unloaded, etc., which are valuable in checking bills for demurrage should there be any. Invoices may be secured in duplicate. The duplicate may be without prices, if desired for the use of the receiving department, which enables that department to check them up without knowing the prices and permits a copy to be kept in the office at all times. To be sure, prompt action is necessary in every department of a factory if the costs and other

records are to be of the greatest value and this is particularly true of the receiving department.

Invoices for material received *must* be checked up and sent to the office daily, in order that all the invoices

FORM 30, FOR CAR RECORD BOOK.

for material received may be credited on the first of the month for the preceding month's business. This will provide for a correct accounts-payable record, which will help in arriving at a correct balance sheet.

It may be urged in contrary to the foregoing statement that it makes no difference whether an invoice is credited promptly or not as if it is not credited it is not charged to the stock room and consequently one offsets the other; but material received the latter part of a month may be drawn out immediately and charged to a stock in process account, in which case the stock room will be credited for something for which it has not been charged.

Aside from this there is a correct way to do things, which is just as easy as the incorrect, slip-shod method when once the habit of doing correctly has been established and where things are done correctly no allowances need be made or anything taken into consideration when a record is being looked over. It will be correct.

### BASIS OF APPORTIONMENT

No absolute rule can be given for the basis of apportionment. Conditions vary so much that what would be proper for one concern would be entirely wrong for another. The more common methods are to base the apportionment on one of the following:

Production Labor  
Productive Hour  
Space Occupied  
Material and Labor

Output of machines or price per hour for use of machines

In some cases two or more of these items are combined. A popular method is to figure the apportionment of manufacturing expense on the production labor, since material is subject to no expense beyond that of receiving, storing and disbursing and this expense may be charged as it leaves the stock room. To be sure, a part of this expense belongs to the stock left in the room, but the value of this does not change except as the market changes and to add a percentage of expense to this cost is to fictitiously increase assets.

All articles manufactured should be subject to a certain amount of the general expense; for instance, of the cost of the rent, heat and light items, although they do not require power or the use of any machinery in their manufacture. Take on the one hand a list of goods made by a factory and the knowledge of what expense is incurred by them, a portion of which they should stand, and on the other hand a statement of the various items

of expense, and it will be found that there are some articles which should bear a part of each expense item and others will be subject to expense from only a few. In this way correct conclusions may be reached. It would not be correct in every case to apportion the expense in proportion to the amount of direct labor, while in other cases it might be entirely proper.

Each instance has its peculiar circumstances which must be given proper consideration in the distribution of expense, since on this depends correct costs and on correct costs depends in nearly every case the success of the business. Knowledge is required, not guess work or supposition. There is not a producing concern in existence which can afford to neglect this vital part of their business. The sale of goods for a profit is the aim of all and to grope in the dark for want of proper costs is sure to invite disaster. With the manufacturing cost and the selling expense known, nothing need be taken for granted.

If it is necessary to take certain orders at a specified price or lose them, a reference to the cost book is all that is necessary. It may be advisable to take orders in some cases at a figure close to the cost, possibly a shade under the cost in order to keep the force intact, and with the cost as a known factor the element of chance is eliminated from the transaction. The correct result is known in advance. Each shipment should bring an amount over the cost large enough to be noticed and if a large part of the shipments cannot be made to do this, it is better to close down and quit while it is possible to save a part of the investment.

There are some manufacturers who wish to know the cost but do not want their cost clerk to know it, so they have the cost clerk turn in the material and labor charges and add the manufacturing expense themselves. There are others who have their cost clerks add so much ex-

pense that all profit is apparently absorbed. These show the methods some men will take to keep their cost men in the dark and these methods are not desirable and are not generally used.

### RUSH ORDERS

There are instances where certain orders must be rushed out in preference to others, orders which are of such a nature that they admit of no delay and to properly designate them the following is suggested:

Have colored slips on which are printed the necessary instructions pertaining to the business. These may be gummed on one end and attached to the shop order for the material. The superintendent then knows the necessity of keeping after that order. The colored slips attached call attention to the urgency of the matter when an imprint from a rubber stamp would probably be overlooked. Of course, everything on an order, or for that matter on any communication, should be given proper attention. In the press of other business some matters often quite important may be overlooked, but there is less chance for it if the special slips are used, for where special attention is required that fact is indicated by the slip.

There is one point not always considered in rushing special orders through a factory and that is the increased cost. It is important in bidding on work to give this factor proper attention. If stock orders have to be side-tracked in order to let a special job have the right of way, it is only proper that the special job should pay for the privileges it enjoys. It costs more to get that kind of work out and therefore the job should bring more. What this extra cost is will have to be determined by the manufacturer after considering all the facts in the case, but it should not be overlooked no matter what is made.

Possibly some things are being made in departments which require a great deal of space and the department is not charged enough for rent. And again, perhaps a certain line would show up better if the department in which it is made did not have to stand expense for rent

FORM SHOWING AVERAGE AMOUNT EARNED BY EACH  
EMPLOYEE IN A GIVEN PERIOD OF TIME.

on space which it does not occupy. To consider theoretically each department of a factory as a separate institution and to figure as such what its share of the various expenses ought to be, will often help in solving the question of distribution of expense. Direct labor and material are easy to handle but when the question of expense is taken up, it requires careful thought in order to be sure that correct costs are known.

## WATER POWER

Where a factory runs by water power its expense for power is usually much less than when steam is used and in cases of this kind power account equipment should be charged with the cost of flumes, turbines, etc., which constitute this equipment.

These items are subject to a depreciation, the amount of which may be determined by a careful estimate of the probable length of time the apparatus will last. This expense, together with the cost of labor and material for operating, forms the power operation account which is periodically distributed over the product as an expense. The bill for water for boilers where steam is used, is a charge to "power account operating," while the water used for drinking purposes would be a charge to the department using it, and if only one bill is furnished by the water company an estimate may be made and a certain percentage of the amount charged may be charged as desired.

## SINKING FUND

A certain percentage of the earnings of a company is sometimes set aside for the purpose of taking care of depreciation. It is better to take care of this item in another way.

Depreciation is always present and should be considered as part of the manufacturing cost, as it is one of the expenses incident to manufacturing. Some charge depreciation regularly every month and at the end of the year inventory at the original cost, which shows up on the balance sheet as a profit. This makes a nice looking statement to send to a bank, but by no means represents the actual state of affairs, as instances where a factory increases in value from year to year with no added buildings or equipment are very rare.

## ADMINISTRATION EXPENSE

The salaries of the officers of a concern are properly chargeable to whatever part of the business they devote their time. If the president gives his time to all the more important matters of each department, his salary should be distributed in a way which will result in each department being charged with its proper share.

In one factory with which I am familiar the president devotes his entire time to the manufacturing end of the business, the vice-president and treasurer take care of the sales and financial matters, while the secretary looks after the accounting including the cost department. The salary of the president is charged to manufacturing expense, the salary of the vice-president and treasurer is charged half to selling expense and half to office expense and the secretary's salary is charged, one-quarter of which goes to manufacturing expense and three-quarters to selling expense. A little thought will show what disposition is proper and the proper preparation once arrived at will require no further attention, being taken care of by the bookkeepers, unless changes in administration cause a new apportionment.

## RENT

Where the factory space is leased there is usually little expense chargeable to rent account beyond occasionally putting in a light of glass or some other small item of this character and since each department requires space, it is proper to charge each department with the proper proportion of that expense.

The office is no exception to the rule and it would seem that this arrangement would be a proper one for some factories, even though the buildings are owned by the concern. The item of rent is no less evident even if

carried under another name. Repairs to buildings, depreciation, yard help, carpenter work, etc., all enter into it and there can be no serious objection to charging each department with its proper share, instead of apportioning its cost over the whole production.

### DEPRECIATION

Except in rare instances equipment becomes less valuable from year to year, notwithstanding the fact that necessary repairs have been charged to expense accounts. This brings up the question of depreciation which, briefly stated, should be a certain percentage of the value of buildings, machinery, etc., charged to depreciation and from this account is charged to various expense accounts.

A certain machine will last, say ten years. It is evident, therefore, that to allow for the proper amount of depreciation, 10% of its cost must be charged off each year so that the cost of the machine is borne by the production each year. In matters of this kind it is well to remember that if 10% of the cost is charged off the first year there is left, at the beginning of the second year, only 90% of the original cost, at which the machine should be inventoried, and in figuring further depreciation 10% per year of the original cost, not balance, should be taken, for if 10% of the balance is used the entire cost will never be charged off. In fact, there will be on the books at the end of ten years over 35% of the original cost which should have been charged off long ago.

One way to handle matters of this kind is to charge off the correct amount at the end of the year, charging it with profit and loss and inventorying at the proper figures to allow for this, a permissible way for concerns satisfied to know at the end of a year whether they have lost money or made money. But the manufacturer who

is up-to-date will consider this item monthly and will know every month how he stands.

Repairs to buildings, machinery, etc., are an expense as a general thing in addition to the depreciation figured. Thus, if a new belt is purchased it is charged to some expense account unless it is for new equipment, in which case it should be charged to belting account. In other words, additions to the plant are assets, repairs and replacements are expense items, and to be sure that the assets are actual and that they will inventory properly, it is necessary to charge depreciation in addition to maintaining so far as possible by repairs and replacements the actual value. In some instances the depreciation will be a small item of course, but the factory and equipment which is worth as much ten years from the date bought as when purchased, is hard to find. Some factories are purchased at sheriff's sale at a small percentage of their real worth. It is not necessary to figure depreciation on them if they are entered on the books at purchase prices. It is usual, however, to make entries which will show purchases of this kind at actual value.

As has been stated before, circumstances govern all these matters and it is not the intent of the author to lay down any set rules in matters of this kind, but rather to express his views on the popular methods. Even real estate is not always exempt from depreciation. Values decline and it is true that they sometimes take the upward tendency. In either case a revaluation is entirely proper.

#### FREIGHT AND DEMURRAGE

Freight on material purchased is a part of the cost of the goods and should be so considered. Coal might cost, for instance, \$1.50 per ton at the mines and have a

freight rate of \$2.10 per ton. It is evident, therefore, that this material costs \$3.60 per ton.

Nobody would think of handling a matter of this kind differently, yet small items of freight are frequently handled in a separate account which is, of course, incorrect unless from that account proper distribution is made. Demurrage charges are properly a charge against cartage and not against the contents of the car or boat. If given his own way, the head cartman might arrange his work so that there would be no demurrage charges, but it sometimes happens that the contents of a particular car is needed immediately and all teams are set to work unloading and by reason of that demurrage accumulates on the cars placed prior to that time. If outside help is secured for carting, the expense would be charged to cartage account, so that it is perfectly proper to charge demurrage which accrues, to the same account.

Demurrage is not always an item of unnecessary expense, for it will frequently be found cheaper to pay a few dollars demurrage charges than to employ extra cartmen. Freight allowed on goods sold may be deducted from the invoice or credited on receipt of the paid freight bill. The former is much the better plan although not the more common one. These items are charged to sales account and the vouchers must be returned promptly for credit if the accounts receivable of the shipper are to be kept correctly. To allow customers to return freight bills for credit once or twice a year will result in many cases of dividends being declared unintentionally perhaps on imaginary profits. The customer can be educated on this point as well as on any other, if the matter is gone about in the right way.

For those who wish to keep their accounts receivable in the proper way, yet do not wish to credit freight on invoices the following is suggested. Figure the freight

on each shipment on which it is allowed and at the end of the month charge sales account and credit special freight account for the total. Then, when freight bills are received for credit, credit the customer and charge special freight account. The balance of special freight account should be deducted from the accounts receivable to find what the balance of this account really is, and after a time a portion of it may possibly be credited to profit and loss account, as some bills may never be returned for credit.

### DISCOUNT

When a bill is paid and a discount deducted for payment within a certain specified time it is customary to credit discount for the amount so saved.

It is true that the goods cost just that much less than the invoice price and some may consider it proper to handle these matters in such a way that the books will show that. The general plan, however, seems to be to credit this saving to the discount account. No appreciable difference in the costs will be noticed, however, as the average rate of discount allowed is less than 2%. Discount allowed for prepayment of invoices of goods sold is charged to sales account, in effect at least, although discount is charged with this account by some. In making the prices we virtually name two prices and the customer chooses which he will take.

### ROYALTIES AND PATENTS

Certain articles may be manufactured on a royalty basis, that is a certain amount per unit may be paid to the owner of the patent for the privilege of using it. In such cases this amount must be charged to the cost of the goods. This is easy as it is a known quantity.

Where the patent on an article or process is acquired, the method of handling it must be different.

ANALYSIS OF EXPENSE					
MONTH	YEAR				
ITEM	AMOUNT	DISTRIBUTION			
		MFG.		SELLING	
OFFICE EXPENSE		%		%	
HEAT POWER & LIGHT					
DEPRECIATION					
ADVERTISING					
POSTAGE					
TELEPHONE					
INSURANCE					
SUPT & FOREMEN					
STATIONERY					
CARTAGE					
TOTALS					
DIRECT LABOR		% %			
SALES					%

The life of a patent in the United States is seventeen years and no renewal is permitted. It is evident that the cost of the patent must be distributed over the material manufactured during this time. It must also be considered that a new patent may make practically worthless the one you hold and may make it unprofitable to continue to manufacture a certain line, which suggests that it is wise to get rid of the cost of a patent, as a rule, during the first half of its life.

It is a common practice to charge patents to a patent account and to consider them as assets. That is well enough providing that a certain amount is charged off periodically. Otherwise the value is inflated.

It should be remembered that the ratings given in the commercial reports are not always correct. The balance sheet of the concern giving them is used as a basis in compiling them and balance sheets sent to the bank are often misleading as to the true state of affairs and many times unintentionally so. Otherwise why the failure of so many manufacturers? It sifts down to the subject of cost and this includes not only the cost of manufacturing, but the cost of selling and if properly handled provides for a balance sheet from which all estimating has been eliminated. In other words, a balance sheet can be made to show the actual state of affairs.

### BURDEN

The name burden is applied by some writers on the subject of costs to that portion of a cost which is treated herein as indirect expense, such as rent, heat, light, power, depreciation, etc. It matters little what it is called so long as it is recognized and treated in the proper way.

The manufacturer who finds that 100% added to his direct labor represents the average amount he must use

as overhead expense or burden, should endeavor to see that the items of expense do not exceed this figure and

FORM SHOWING IN DETAIL, COST OF ELECTRICAL GOODS. THIS FORM MAY BE ARRANGED TO SHOW COST ON ANY ARTICLE.

comparative statements showing both by value and percentage of each expense item will enable him to keep account of this subject. In making an estimate he can

add one-hundred per cent to the estimated labor cost and will thus arrive at a pretty accurate figure, safe enough to take business on. The cost of estimating is a manufacturing expense in some cases and in others a selling expense. To illustrate: A factory making a line of shelf hardware to carry in stock would charge the expense of estimating its cost to manufacturing expense, while a foundry making castings only on orders and estimating on the requirements of a customer, would consider the estimating charge as a selling expense.

### HEAT, LIGHT AND POWER

These subjects are usually considered in the same account since the source of production is usually the same. Power is a general expense. All departments of a factory use it to some extent at least and also require heat and light. A subdivision of this account or the expense part of it may be as follows:

Power account—Labor  
Power account—Material  
Power account—Repairs

The item of labor is made up of what is paid the engineers and firemen.

Material includes coal or whatever else is used for fuel, including in some places scrap pieces of wood and shavings from the wood shop, which is credited to the department delivering it.

Repairs will be charged with whatever expenditures of labor and material are necessary to keep the plant in running order and to maintain so far as possible its insurable value. New boiler tubes and the labor of putting them in would be an illustration of what is meant by this item. The power account will thus be kept in a way which will admit of a statement being made monthly,

which will show the cost of the various items constituting this account. Comparative statements of this kind are of great value. Coal purchased for use under the boilers would naturally be charged to power account material, yet it is not proper to do this unless all the coal charged during a month is used in that month. Where apportionments of expense are made monthly, it would be a much better plan to charge the coal to coal or fuel account and as it is used credit this account and charge power account material.

Of course it makes no difference in the long run, but it does not give correct costs to treat matters of this kind carelessly. It might result in the wiping out of all profits for the month, if the inventory were not taken into consideration and besides, what is the use of having approximate costs when actual costs are so easily found?

In a certain factory the various departments were as follows: Woodshop, machine shop, foundry and pattern department and in addition space in one of the buildings was rented to a concern making bicycles. In order to determine what proportion of expense for power was properly chargeable to each department, an engineer was called in who went about it in the following way:

He found the actual horse-power used when each department was running in the usual way. He then had every machine in the factory thrown off so that only the line and center-shafts were in use. At different times he had each of the various departments run all their machinery as usual, while all the other rooms had no machinery running. This was done by a system of signals from the engine room, the whistle being blown as per a program of which each foreman had a copy. When this test was finished, it was easily determined just how much of the expense for power was chargeable to each of the departments, something they had been guessing at, and it

was also found that by trueing up the line shafting a considerable amount of power was saved, enough so that the saving in that alone paid for the test in less than a

Reports of Accounts Unpaid at the beginning of the month and  
Cash Collections and Bank Deposits during the month.

Office	Month of	190	
	Accounts Unpaid		
	Cash Collections	Bank Deposits	Remarks
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
Totals			

DAILY COLLECTIONS FORM—34.

month. Tests of this kind do not have to be made often, but are of immense value to some establishments. Where electricity is used a test of this character is not needed, since the power company can furnish the required information and it might be remarked that the saving in electricity is considerable, since the line shafts are eliminated to a great extent.

In apportioning the expense for power the office should not be overlooked, since it requires light and heat. In some cases a flat amount is charged to the office for rent, which includes these items and the amount credited to general expense, which simplifies matters to quite an extent.

#### CARTAGE ACCOUNT

This account is usually charged with the expenses of operating the department maintaining the equipment, salaries paid, expenses of repairing harness, etc., are all a part of this account. To determine how the amounts charged to this account shall be apportioned requires a careful study of conditions. Part of the work done by this department is the drawing in of material to be manufactured, part is in taking finished goods to the railroad station or to customers.

It can easily be found what proportion of the expense incurred should be borne by the several departments served and the charges can be based on these figures. Thus a certain percentage might be charged to factory manufacturing expense, part to wood shop expense and part to power account and the proper proportion once arrived at will require no changing, as a rule, for a long time. As assets, this account will have the value of the equipment, which should be subject to a change for depreciation. The account may be divided into two parts, one of which represents the equipment or assets and the other

the charges for maintenance, which are of course expense items and should be charged to other expense accounts periodically.

### MECHANICAL APPLIANCES

Machinery has much to do with the reducing of costs in the factory and in the modern offices are found many machines which give absolutely accurate results at a large saving of time. Time recorders, typewriters, numbering and computing machines are made in such variety that all business requirements can be met.

It is unnecessary to dwell on the fact that the concern using these modern up-to-date appliances has a great advantage over those who still stick to old fashioned ideas and methods. Nor is it advisable to mention in this treatise the manufacturers of these devices, since the reader can get all the information necessary by writing to the advertisers in the technical and business magazines.

### INSPECTION

The cost of inspecting an article is part of the cost of that article, yet it is not always advisable to treat the matter in just this way. The cost of inspection therefore is sometimes made an expense item against the whole department and reaches the articles inspected through the manufacturing expense.

If each article produced in a department were subject to inspection charges, possibly there would be no great difference whichever method were used, but the fact remains that there are usually some articles which do not require inspection and this leads to the conclusion that the former plan is the more desirable.

The cost of boxing an article may be made to include the final inspection in many cases and it is desirable to do this where possible. Where more than one employe is

engaged in this work tickets may be furnished giving a letter or number and one of these packed in each box. This serves to identify the packer should a complaint against the packing be received. The item of boxing is a part of the cost of an article, as is also the cost of the box, label and direction sheet if one is used. These are considered in the estimate when one is made and may be deducted from the cost when quoting on material to be furnished in bulk.

It often happens that concerns purchase in the open market some finished part which they have not considered it advisable to make for themselves. In order to know that they are saving money by this method, it is advisable to make an estimate on the part to see what the cost should be. The outlay for special machinery, tools, etc., should be considered in order that an intelligent comparison may be made.

In changing from buyer to manufacturer it is well to proceed slowly, for there are some manufacturers who, by specializing their product, making only one line of goods, are able to produce them at a minimum figure. The utilization of scrap often plays an important part in reducing cost. Brass parts of machines may often be made for less than steel parts, for the reason that the scrap has a much greater value than steel scrap and owing to its softness brass may be worked on faster. Often it is possible to more than triple the output. And again, the saving in selling the scrap where possible has its saving effect. Even scrap tin, which is usually thrown on the dump, is worth many dollars per ton and the skimmings from a brass furnace are saleable at several dollars per barrel. A large saving is possible in many of the large factories and practically all of the small ones in this saving of waste material alone, enough in many instances to enable them to declare a larger dividend than before

## SIMPLE COST SHEET FOR JOBBING FOUNDRY.

and possibly to enter into the manufacture of articles on which the apparent profit has seemed too small.

### INSURANCE

Insurance is an expense which should be apportioned to the various departments in a way which will insure each department getting its rightful share. The charges for the year must be divided into twelve parts and one part charged each month, so that each month's production stands the proper amount, for the production has to stand this expense eventually. Liability insurance, plate glass and fly-wheel insurance are all treated in the same way, as is also the subject of taxes.

### LOOSE-LEAF BOOKS AND CARD SYSTEMS

A great deal of thought has been given to the subject of loose leaf and card systems of accounting and in most factories their use is an advantage. A combination of cards, loose leaf books and bound books is usually best, as there are some places where each may be used to good advantage.

There are some who yet use the old bound books exclusively and there are others who have gone cards-and-loose-leaf crazy. Neither is getting the best system, for there are places where cards and cards alone give the best results, and the same can be said of loose-leaf systems and bound books and it is well for the manufacturer to remember that a fad or mania in this connection will often defeat the desired results. The ideal system is that which gives the best results with the fewest number of forms for the work in hand.

### ARRANGEMENT OF FACTORY

The arrangement of departments has much to do with costs. A factory which is so arranged that material

starts in at one end of the plant and goes directly through, coming out as finished product at the other end, is pretty well equipped. It is the continual carting of partly finished material back and forth that increases cost with nothing to show for it. Of course, this ideal arrangement can never be maintained absolutely, for as a plant grows the additions can not always be made to conform to this idea. The thing to avoid is unnecessary trucking. Keep the material where it is easy to reach and arrange so far as possible to send work from one department to another quickly, and avoid such things as having the woodshop the length of the plant from the lumber piles.

### PURCHASING

The purchasing department plays an important part in costs. The material must be selected not only on account of price, but quality as well. There is a factor which must be reckoned with in some cases, dishonest foremen, and this matter shall now receive our attention.

While talking with a salesman for a varnish house a short time ago, I mentioned our neighbors across the street and said: "They use large quantities of varnish. Do you sell them?" and his answer, "No, they have a crooked finisher," surprised me. To overcome similar conditions the following plan is submitted in the hope that it may be of benefit to manufacturers and purchasing agents in placing contracts, even if the article in question is not varnish.

Get your samples together, the same quantity from each bidder for the contract and transfer these to new tin cans on which has been pasted a label bearing a number only. Send the whole outfit to the finishing department and have a test made. The finisher cannot tell without the label whose goods he is testing. He must make the report then on merit and if it shows that

the kind you have always used is the best, keep on using it. I do not mean to suggest that any great proportion of finishers is dishonest. Rather I would say that they are all honest and then proceed to prove that by a test as I have suggested.

The purchasing agent should do the buying. It is not a profitable thing for a factory to have its foremen do that work and the firm which permits salesmen to interview employes outside the purchasing department is taking long chances. I have known representatives from oil houses who never asked for the purchasing agent. They wanted to see the engineer and through him work back to the "Purchasing Department," with a requisition for an order. The salesman of the future is going to be a *salesman*, not merely a traveling man and will be straightforward and honest in his methods, as indeed most of them are now. Permanent service is never built on anything less than 16 oz. to a lb. and 100 c. to a dollar. If it is necessary for a salesman to interview a foreman, I believe it is a good plan for the interview to take place at the purchasing agent's desk and samples to be tried should be distributed from this same department after making provision for a report on them. Finally, I believe that a purchasing agent does himself an injustice if he does not see every salesman who attempts to call on him. Many of his callers will, it is true, fail to interest him, but it is necessary to see them all in order to find the one who will do best by you.

#### CLAIMS AND HOW TO HANDLE THEM

In this article no special forms are shown, as but few are required and they are so simple as to be readily under-

stood from the descriptions. The question of claims naturally divides itself into two classes:

1. The claims made on an establishment by its customers and
2. The claims made by a concern against the transportation companies and the people from whom they purchase.

Some houses make a practice of paying every bill sent them by a transportation company and if there is an overcharge they enter a claim for it later. To me this seems a reckless way of doing business to say the least. If a bill is rendered for car service, for instance, it should be checked up by the shipping clerk from his car book, which is a record easily kept and if correct, it may be paid. If it is incorrect, don't pay it. Make them submit a bill which is correct. If this plan is followed, it means one less claim to enter in case an error is discovered in the bills, a dozen or so fewer letters to write, to say nothing of loaning the amount of the overcharge to the transportation company for a few months without interest.

When freight bills come in they should be examined the same as invoices, the rate checked by the traffic manager and if correct in every way should be O. K.'d and paid. But if it is paid on presentation (a common practice) and errors are discovered later, it becomes a case of getting down on your knees and humbly asking for the return of your own money. The claim clerk, traffic manager or whatever he may be called, can be as useful in keeping down the number of claims as he is in properly following up those which it has been necessary to make. The time extended by the local freight agents in which bills may be paid is, of course, a courtesy on his part and is of just as much value to the transportation company as to the consignee, as where the practice is to pay monthly or semi-monthly, clerical work is reduced in

*both* offices. This must answer the argument often put forth, that if you don't pay the bills as rendered you will have to pay on delivery of freight which, of course, would make an immense amount of extra work.

To sum up the claims against transportation companies: They should consist of claims for goods lost or damaged in transit and possibly for overcharges on the freight bills sent in by customers for credit. In entering a claim a letter should be written giving all the essential information and to this should be attached the original bill of lading. This letter is mailed to the transportation company and a copy kept for the office files. All claims should be numbered and a quantity of letter heads with blank spaces for the numbers will be found very convenient and in addition a request may be printed asking that your claim number be referred to in all correspondence relating to the matter. A charge is made whenever a claim is made against a transportation company and the number of the claim should be posted in the ledger. When a remittance is received paying a claim, the number of the claim it pays should be placed on the cash book in order that the book-keeper may post it and then check both the charge and the payment. The unchecked items will then represent unpaid claims and when the auditor makes an examination of the books he can see the situation at a glance and if necessary can ask for the correspondence, especially if he has reason to think that the matter has been unduly delayed.

If the man who enters the claims and follows them up, has charge of the routing and interviews with the representatives of the railroad companies, it will be found that the claims will receive better attention than if these matters are handled by separate departments. The rule, no just claim need ever be withdrawn, is a

good motto for the traffic manager to have on his desk. The ledger accounts of the various companies against whom claims are entered thus serve as a check on the claim department and no claim can be cancelled once it is entered, unless a credit is put through, and in the matter of authorizing credits there is not much laxity in any of the business houses of today.

In filing claims a vertical file will be found very satisfactory. Folders are provided one for each claim and are numbered the same as the claim. As soon as a claim is paid or otherwise disposed of, it is transferred so that the files in daily use will contain nothing but live matter. Index cards numbered in multiples of ten will be very desirable where there are many claims, as they will enable the claim clerk to pick out readily what are required for the day's correspondence. A filing box should be used which contains cards, one for each claim, arranged according to the date it is desired to write regarding them. These contain

1. Name of transportation company
2. Date Claim was entered
3. Amount of claim
4. Number of claim.

The rest of the space on the cards may be used to stamp the dates on which letters were written regarding it. The general practice seems to be to write once a month on matters of this kind, but in any event a set of index cards from one to thirty-one is all that is required, as when writing in regard to a claim the card may be placed ahead to the date it is desired to take it up again. This arrangement brings the list of claims which require attention to the notice of the claim clerk automatically. A claim register which is simply a cheap index book, may be kept in which each claim is indexed alphabetically and in the back of this the numbers may be placed consecutively, so that in taking out the cards for any one

day a reference to the serial numbers will show if any have been disposed of or paid. A line is drawn through the number of claims paid or withdrawn. This is not absolutely necessary however as, if the correspondence regarding a claim is not in its place, it is proper to consider that the claim has been disposed of, in which case the card may be placed in the back of the filing tray for future reference.

The claims made against a house by its customers will require a little different treatment. They usually consist of items of freight, discount, shortage and errors in prices or extensions. There is no necessity of permitting matters of this kind to run month after month. They can be settled better when they are new, than at any other time, as later many of the facts bearing on the case are likely to have been forgotten. If it is a question of discount or freight, it is either allowable or not allowable and it should be up to the claim clerk to make the necessary credit if it is allowed or to advise the customer if it is not. This part of the office correspondence calls for considerable tact. A customer resents abruptness in telling him that his claim is not a proper one and this work will be handled better by having it directly under the supervision of the sales manager, than in any other way. He is in a position to know the peculiarities of the customer and can outline what is best to say in those cases where the claim clerk is in doubt. There is no doubt whatever that many firms lose thousands of dollars worth of business annually just because the complaints are not handled in the proper way. An explanation will often smooth things over and you can reason with a man where you cannot drive him. Keeping a customer is just as necessary as getting one and a customer once lost is hard to get in line again. It will often be found advisable to send the salesman a copy of letters written in matters

of this kind and it may be a good plan to have the salesman settle the whole matter the first time he calls on that customer.

The whole matter of handling claims will simmer down to system and tact. A proper system of filing and a tactful man at the head of the department, one who will remove the edge from a sometimes disagreeable statement by stating the proposition in a fair and square business-like letter, are all very desirable.

### HOW TO FILE CLAIMS

The problem of filing claims is not very perplexing when the number is small, but when there are hundreds of them to look after there must be a system devised which will enable a letter regarding a claim to be given proper attention, even though the customer does not give the claim number as requested.

It is the small consumer as a rule who ignores requests of this character. The claim number means nothing to him. He keeps his invoices on a spindle and when they are paid throws them into a drawer and he forms his own idea of your business from his own reasoning, that as his claim is important to him it must be to you. This view is correct in a way, yet the point he does not consider is, that where one credit is due him the house he is doing business with may have hundreds daily equally important. The following plan may assist in the handling of matters of this kind and is given in the belief that it is new and untried. Yet in spite of this fact it should work out entirely satisfactory. An alphabetical index is used, in which the names of the

customers who make claims and the names of the people from whom material is purchased are written as often as they are required. The number given, a name is never changed. Subsequent claims are designated by a letter, thus: Claim 418A would be the number of the first claim entered, 418B the second and so on. A vertical file will be found very convenient for filing the folders relating to a claim, one of which is used for each letter required, although as a rule one folder for a customer will be all that is required. If a letter comes in regarding a claim and does not give the claim number, a reference to the index will show where the rest of the papers may be found, while if the number is given it is only necessary to turn to the file and get the needed documents.

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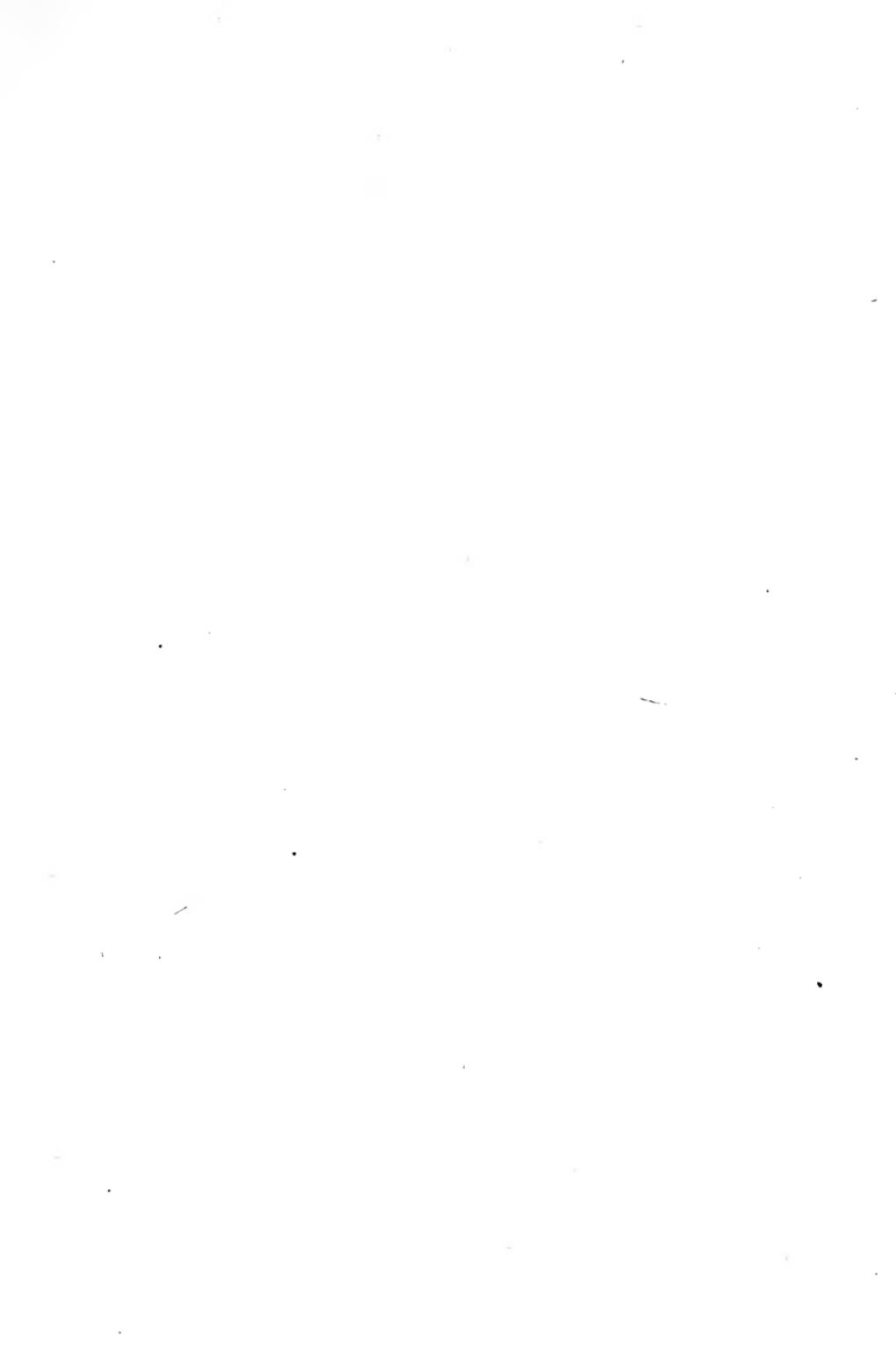
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